# SPANISH *MICRO-LEPIDOPTERA*.

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## Introduction.

Any Micro-Lepidopterist taking stock of his collections and desiderata among European species must suffer from a mixture of uncertainty and covetousness when analysing the descriptions of new species published by the late Dr. Staudinger after his two expeditions to Spain in 1857 and 1858. The first and more important of these was confined to the southern portion of the country. Among *Tineidæ* no less than 12 out of 76 descriptions were founded upon single specimens and 8 others on 2 specimens only, while in many cases the amount of material was very limited. Many of the whole number have since been recognised and are known in a few collections, but the majority of the uniques are still unknown without access to the types. It was in the hope of meeting with some at least of these species that I started in December, 1900, for a six months' holiday in Spain, and devoted as much time as I could afford, among other occupations, to collecting.

A month's visit to Seville before and after Christmas, during which the weather was atrocious, produced very meagre results. No good wild or uncultivated ground could be found within many miles of the town, but at Coria del Rio old thatches were full of hibernated *Depressariæ*, while *Thiodia pædiscana*, Stgr., and *Lithocolletis chiclanella*, Stgr., were feeding in leaves of *Populus alba*.

A visit to Alcalar supplied a few more common species, and *Platyedra vilella*, Z., was again a common occupant of thatch. At Jerez the same methods yielded *Opostega spatulella*, HS., with hibernated specimens of the *Lithocolletis* already mentioned, and a small *Anybia* (?) *seeboldiella*, Rag.

Chiclana, the spot where most of Staudinger's unrecognised species were obtained, was the place at which I was most anxious to stay, but small-pox was prevalent and accommodation primitive; nevertheless, on December 15th, in a heavy downpour of rain, I spent about ten minutes by the road-side during a flying visit, and was fortunate enough to find larvæ of *Hypsolophus cisti*, Stgr., and cases of a *Colcophora* on *Helichrysum*, the same cases obtained later from the same plants produced a species almost undistinguishable from *cælebipennella*, Z., but the cases are much narrower and straighter than those of this species from other localities.

Hearing glowing accounts of the climate, I started for Malaga,

and remained there for about three months, during which time flying visits were paid to Gibraltar, Tangier, Coto and Cala Moral, and again to Chiclana about February 20th. Never anywhere have I met with such persistent bad weather as during the greater part of my stay at Malaga, and indeed it dogged my footsteps on almost every excursion. At the beginning of March there was snow on the coast-hills in Morocco, opposite to Gibraltar! Whenever the rain stopped a strong wind made collecting impossible; my diary records from February 21st to March 3rd more or less wet on every day (usually more), the 27th being the only mention of "occasional sunshine" during the whole of this time I spent at Chiclana. Under such circumstances it is not surprising that many of Staudinger's species from this locality escaped me, but rather that *Phtheochroa simoniana*, Stgr., *Coleophora struella*, Stgr. (larvæ); one or more species of *Scythris*, *Polychrosis hibernana*, Stgr., and sundry other useful species, with a number of larvæ subsequently reared, rewarded a dogged but humid perseverance. The character of the country is very different from that of Malaga. Great tracts of young pine-forest cover the slightly undulating ground between the salt-marshes and the sandy dunes on the sea-coast. The undergrowth consists for the most part of various species of *Cistus* and *Helianthemum* with *Quercus coccifera*, *Daphne gnidium*, thyme and juniper—the latter only near the coast (two species, *macrocarpa* and *phœnicius*), but *Tortrix cupressana*, Dp., + *nobiliana*, Stgr., was sought in vain among these, it was too early to expect it to be out. On the banks between the salt-pans were many interesting shrubs—*Limoniastrum monopetalum* (from which I bred what at present appears to be a new species of *Symmoca*), *Arthrocnemon fruticosum* (larvæ on this not reared), *Suæda fruticosa* and *Statice ferulacea*. Other plants observed in the neighbourhood of more or less interest were *Drosophyllum lusitanicum*, *Paronychia argentea* (frequented by young larvæ of *Dissoctena granigerella*, Stgr.), *Asteriscus maritimus* (with larvæ of two species in the dry seed-heads, one subsequently producing an undetermined *Metzneria*), *Phlomis purpurea* (in the seeds of which were larvæ of *Phalonia moribundana*, Stgr., and a Blastobasid still undetermined), *Osyris lanceolata*, *Teucrium fruticans*, *Helianthemum halimifolium*, *Phaca bætica*, *Mercurialis* sp., &c., but this is not a botanical treatise, and I am indebted to the staff of the British Museum for the majority of these identifications. A great prize was a Pterophid (larvæ on *Phagnalon rupestre*), which subsequently proved to be that of the very rare and distinct *Alucita olbiadactyla*, Mill. The late M. Millière gave me one of the two specimens of this species in his col-

lection, and I had not since been able to find the species in any of my southern excursions, although I have frequently searched for it. This year I was fortunate enough to breed two from Chiclana, and to take others on the wing at Malaga. *A. olbiadactyla*, which is referred by Dr. Rebel to the genus *Gypsochares*, Meyr., is identical with the Andalusian species issued by Staudinger under the MS. name *leptodactyla*.

Being unable to visit Chiclana again, this excellent locality was left practically unworked, but somewhat similar ground and vegetation were subsequently found from April 22nd to the 25th at Coto; here again torrents of rain and a bad attack of lumbago interfered greatly with work as well as comfort, yet I found *Phalonia carpophilana*, Stgr., and *Holcopogon bubulcellus*, Stgr., abundant in the larval stage, the latter of all ages in dried cowdung as recorded by Staudinger from Kalisch's observations, and specimens of both species occurred on the wing. Berries of *Juniperus macrocarpus* and *phœniceus* were eaten by *Gelechia oxycedrella*, Mill., while almost every leaf of one particular cork-tree had from one to four mines of a *Tischeria*, which requires very careful comparison with *complanella*, Hb., and its allies. It resembles *decidua*, Wk., in size, and *dodonæa*, Stn., and *complanella*, Hb., in the presence of a dark spot near the base of the fore-wings on the underside; *Gelechia suædella*, Rdsn., and *Polychrosis hibernana*, Stgr., also occurred. The exact situation of Coto is near the point of land south between the right bank of the mouth of the Guadalquivir and the sea—thus immediately below the gigantic marshes of the Marisma, which abound with wild-fowl of all kinds. The ground is preserved for game, red-deer and wild boar being abundant. At one view I calculated there were no less than 5000 flamingos in sight, some rising like a pink cloud on the horizon, others feeding in long lines about the marsh, others flying overhead with hoarse cackling, looking all legs and necks. It was interesting to watch their movements through a good telescope which I brought in the hope of meeting with the wild camels—my guide told me he saw seventeen in one group in March, but they were about 15 miles farther north.

At Gibraltar an hour spent in the rain at the foot of the rock on March 2nd produced larvæ of *Epermenia* on *Umbelliferæ*, of a small *Eucelis* on *Alyssum maritimum*, with an *Elachista* and a few other things flying.

At Tangier and Cape Spartel in the following month the persistent gales rendered collecting almost hopeless. Single specimens of a few interesting things were beaten out of fences and shrubs, notably

*Solenobia pretiosa*, Stn., and a curious variety or species of *Eriocottis*, apparently differing from *fuscanella*, Z., *andalusiella*, Rbl., and *pyrocoma*, Meyr. The most interesting thing found was a larva mining patches on leaves of a very tall mallow, which after brief pupation produced a new species of *Dialectica*, somewhat similar to *Graeilaria omisella*, Z.; this larva is brightly coloured, with transverse red bands, greatly resembling that of *Coriscium brongniardellum*, F., when full-fed. One or two larvæ of *Teratopsis permixtella*, HS., were found on *Phillyrea* near Cape Spartel in their leaf-rolling stage, and easily reared. On this side of the town the country is for the most part covered with *Cistus*-brush, but on the east side *Quercus coccifera* is abundant, after about a mile or two of the heavy sand of the shore, and on the leading shoots of this oak several larvæ (apparently of a Tortricid) were collected, which have not yet produced the moths, and a single *Coleophora*-like case, exactly corresponding to those described by Dr. Staudinger from Chiclana (*vide* Stn. Tin. S. Eur., 151), and attributed to his genus *Epidola*. Unfortunately this also has failed to produce a moth, but the larva of *Epidola* is now known to occupy a short piece of hollow stem, and the dark brown cases on *Quercus* must certainly belong to some species of *Coleophora*.

The only other excursion of any importance made from Malaga was on a visit to a friend on the coast near Cala Moral on the road to Gibraltar. The vegetation here was very rich, especially in numerous species of *Cistus*. Among the best captures were the following:— *Gelechia plutelliformis*, Stgr., *Coleophora solidaginella*, Stgr. (larvæ abundant, since reared), *Aproœrema lamprostoma*, Z., originally described from Syracuse, which I now find equals my South African *Gelechia zulu* [Wlsm., Tr. Ent. Soc. Lond., 1881, 261-2, Pl. XII, 30], a single specimen of *Orneodes perittodactyla*, Stgr., *Paltodora lineatella*, Z., an *Eriocottis* having the pale dorsal margin of *andalusiella*, Rbl., but distinctly greyer and less shining than that species, the costa also less arched. A very similar form from Malaga does not possess the dorsal streak. I have seldom seen anything more beautiful than the flowers of *Cistus crispus* at this place. The brilliancy of their colouring in a carpet of low growth was almost dazzling.

Thus far I have mentioned short visits paid to various places during the time that my head-quarters were established at Malaga. One trip to the Sierra Frigiliana in pursuit of the Spanish Ibex (*Capra hispanica*) during which entomology was almost entirely neglected needs no mention here. My recollections of Malaga, except

perhaps during the latter half of the month of April, are a continuous record of wind and rain. When it didn't rain it blew, and when it didn't blow it rained, and when everybody said it was going to be fine it did both. Nevertheless, I managed to make myself well acquainted with every hill and valley along the coast-line for many miles to the east of the town, where the ground was more favourable than to the west. Among larvæ successfully reared were several interesting things, but a rather large proportion failed from being collected when too young. Among the former were *Gelechia hyoscyamella*, Mill., on *Hyoscyamus albus*. *Aristotelia frankeniæ*, Wlsm., on *Frankenia lævis*, a *Metzneria* on seeds of *Asteriscus mauretanicus*, a probably new *Hypatima* from under bark of a dying fig tree, a small *Coleophora* on *Calendula arvensis*, which also ate the leaves of a grass, *Tortrix peramplana*, Hb., not uncommon in leaves of *Scilla* (*Urginea*) *maritima*, *Hypsolophus limbipunctellus*, Stgr. (= *millierellus*, Stn.), on *Cistus crispus* and *salviæfolius*, a new *Nepticula* on *Anthyllis cytisoides*, a new *Coleophora* on *Genista umbellata*, *Phalonia moribundana*, Stgr.; and a *Blastobasis* from seeds of *Phlomis purpurea*, *Acrolepia solidaginis*, Stgr., *Coleophora lineolea*, Hw., and *Alucita spilodactyla*, Crt., from *Marrubium*, &c. Among the latter, perhaps not all yet beyond hope, I have in my bottles a *Coleophora* on *Helianthemum lavandulæfolium*, and another on *Lithospermum* (possibly only the *Echium*-feeding *onosmella*, Brahm), two species of *Coleophora* on *Anthyllis cytisoides* with similar cases but of different sizes, which will be again mentioned when dealing with further occurrences at Granada, a *Loxopera*, probably *bilbaënsis*, Rslr., in stems of *Crithmum maritimum*, and *Crinopteryx familiella*, Peyr. (found also near Seville). Among captures on the wing were several interesting species of *Coleophora* and *Scythris* not yet fully identified, another *Eriocottis* allied to *fuscanella*, Z., a single specimen of a *Cosmopteryx* intermediate between *lienigiella*, Z., and *semicoccinea*, Stn., certainly new to Europe, but greatly resembling the forms prevalent in Malaysia. *Eidophasia syenitella*, HS. (also abundant at Granada), *Sophronia exustella*, Z., *Protasis pleurotella*, Stgr., *Ancylis sparulana*, Stgr., *Metzneria castiliella*, Mschl., and a new species of the same genus (the larva of which was afterwards found on *Asteriscus mauretanicus*), with many others of minor impartance.

When the weather improved I started for Granada, an entomological Paradise, where the indulgence of one's acquisitive propensities threatens long hours of critical museum work for time to come. Here I spent the months of May and June, reaping a somewhat rich harvest, which might have been richer if more time had been devoted to the

pursuit. Here *Protasis glitzella*, Stgr., was abundant, with *Phalonia roseofasciana*, Mn., *infantana*, Kul., *Pharmacis meridiana*, Stgr., *Loxopera tornella*, Wlsm., and a *Phalonia* allied to *languidana*, Mn., caught and bred from *Heliehrysum*. *Brachodes cassandrella*, Stgr., which can scarcely be considered more than a geographical subspecies of *vernetella*, Gn. (although I could undertake to separate them at sight), *Tinea simplicella*, HS., singly as usual, *chrysopterella*, HS., very abundant locally, a *Tineola* distinct from but closely allied to *crassicornella*, Z., also abundant, *Nematois albiciliellus*, Stgr., *Cerostoma persicella*, Schiff., some good *Depressariæ* and *Gelechiadæ*, including the conspicuous *Enolmis ratella*, HS., and *Stomopteryx detersella*, Z., *Pteroloncha pulverulenta*, Z., and *Megacraspedus dolosellus*, Z., a new species of *Didactylota* which I had previously met with in the Pyrenees, *Metzneria aprilella*, HS., *Leeithocera pallicornella*, Stgr., already recorded from the same locality, *Pleurota heydenreichiella*, HS., which is now (rightly or wrongly?) sunk as a variety of *honorella*, Hb., and other species of the same genus about which I must equally reserve my opinion for the present. Larvæ of *Coleophora spumosella*, Stgr., on *Dorycnium suffruticosum*, the rare *solenella*, Stgr., on *Artemisia* and *ononidella*, Mill., both less abundant here than in the Pyrenees. *Coleophora vestalella*, Stgr., caught and bred from the larger of two cases on *Anthyllis cytisoides*; here I bred also a different species from the smaller cases, corresponding exactly to a series taken among the same plant at Malaga, where they were very abundant. *Micropteryx isobasella*, Stgr., of which I did not previously possess males—the male has a distinct purple mark at the base of the fore-wings which is consistently absent in the female, thus exactly reversing the rule in *calthella*, L. *Micropteryx imperfectella*, Stgr., to which a peculiar history attaches—two species were mixed in Staudinger's series, and after rightly describing one of them (*imperfectella* No. 1) he amended his description in 1860, referring to Herrich-Schäffer's figure as correctly illustrating his species. I was fortunate enough to meet with both forms, one at Tangier the other at Granada. They are undoubtedly distinct, but the original description must be taken to fix the name in its application to No. 1, and Herrich-Schäffer's figure (n. Schm., fig. 113) plus Staudinger's description of *imperfectella* No. 2 requires a new name, and **jacobella**, n. n., seems to fit the case. [Experience teaches that it is unwise to delay the correction of an error when drawing attention to it, and that it is better to apply than merely suggest a new name.] *Lithocolletis joviella*, Cnst., may also be worth mentioning as not hitherto recorded from Spain, *Bryophaga deli-*

*catella*, Rbl., and a new and distinct *Trifurcula* abundant among *Retama sphærocarpa*.

The only excursion made from Granada was to the Sierra Nevada in an easterly direction. I camped at a height of nearly 6000 feet, and collected for two days with results better in quality than in quantity. I am not prepared at present to deal with the species obtained, but the most extraordinary sight I have ever seen were tho myriads of *Lithocolletis adenocarpi*, Stgr., which thickened the air like innumerable midges on the slopes below my camp—each blow of a stick upon one of the bushes would dislodge thousands, and it was not until the bush had been well thrashed that their numbers appeared to diminish. The mines of the larvæ were in nearly every leaflet, and in spite of the quantity already out, a few dozen mines collected at random produced a good series of bred specimens, many of which came out before reaching camp. Here I touched the edge of the snow-line, and as the weather was very hot a mouthful of snow was very refreshing. The nights were warm and quite dry, there was absolutely no dew, which was fortunate, as there was equally no tent and practically no covering. The early morning about sunrise was as usual in mountain districts as good or better than the evening for collecting, but during the day nothing could be done but search for larvæ.

This is merely a hasty summary, and by no means represents a study of the 4000 or more specimens which I brought back, moreover, many pupæ are yet under observation. My Italian valet, Barberi, was of great assistance to me in collecting. He had a quick eye, and soon learned to recognise certain genera and even species, and to discriminate between such as had occurred before and such as had not been observed; he was especially successful in finding larvæ whether under special or merely general instructions.

The nomenclature used in this short account is advisedly employed (although in many cases it differs) from that adopted by Staudinger and Rebel; on this subject more will be written when the species are worked out, and when further notes and descriptions can be published.

*(To be continued).*

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## BALEARIC INSECTS.—*HEMIPTERA-HETEROPTERA*

COLLECTED IN MAJORCA AND MINORCA (MARCH AND APRIL, 1900) BY E. B. POULTON, OLDFIELD THOMAS, AND R. I. POCOCK.

BY EDWARD SAUNDERS, F.L.S., &c.

*Solenosthedium lynceum*, Fieb., 1 ♀, not localised, 1900 (Thomas and Pocock).